

**Notice of Allowability****Application No.**

10/629,419

**Examiner**

Ngoclan T. Mai

**Applicant(s)**

NISHINO ET AL.

**Art Unit**

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/29/03.
2. ☒ The allowed claim(s) is/are 1-29.
3. ☒ The drawings filed on 29 July 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Ngoclan T. Mai  
Primary Examiner  
Art Unit: 1742

### DETAILED ACTION

1. Claims 1-29 are allowable.

### REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance:

Idota discloses a negative electrode material for use as a negative electrode in non-aqueous secondary battery; the negative electrode material comprises a boron-containing compound which may be pulverized and classified using any known pulverizer and classifying device such as a mortar and a pestle, a ball mill, a vibrating ball mill, a satellite ball mill, a planetary ball mill, a spin flash jet mill, or a sieve, see Col. 3, lines 13-23. The negative active material taught by Idota is a compound represented by the formula  $\text{SiB}_n$  where  $n$  ranges from 3.2 to 6.6 and not an alloy powder.

Hashimoto et al disclose a negative electrode for lithium secondary battery and a lithium secondary battery; the negative electrode is formed of an aluminum alloy powder as an active material. Hashimoto et al teach that the substantially amorphous aluminum alloy can be prepared by methods including mechanical alloying, col. 2, lines 35-39, Hashimoto et al, however is silent about the temperature during which the powder is formed into alloy by mechanical alloy. Fujiwara et al also teach a material for negative electrode formed by mechanical alloying powder comprising Si. See col. 5, lines 40-44. Fujiwara et al is also silent about the temperature during which the powder is formed into alloy by mechanical alloy. This leads one of ordinary skill in the art to believe that the mechanically alloying taught by Hashimoto or Fujiwara is performed in ambient

Art Unit: 1742

temperature as conventionally done in the art. There is no teaching or suggestion in the prior art to motivate one to form negative electrode-active material by controlling the temperature during mechanical alloying the claimed raw material powder to a reaction temperature of below 90°C.

By controlling the temperature during mechanical alloying raw material powder for negative electrode-active material, the result product has a higher capacity retention factor over one that is produced without temperature controlled during mechanical alloy. This can be seen in examples 6-10 and as shown in table 2 of the instant application. Also by subjecting alloy powder of the claimed materials to mechanical milling, the result product can also have a higher capacity retention factor over one that is not subjected to mechanical milling. This can be seen in examples 1-5 and as shown in table 1 of the instant application.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 7:30-4:00 PM Monday-Friday.

Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ngoclan T. Mai  
Primary Examiner  
Art Unit 1742

n.m.